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ABSTRACT

As the traditional bipolar sex-role stereotypes are being reconsidered, psychometric instruments are being developed to assess the alternative sex-role models and to allow the new concepts to be operationalized. Androgyny is an increasingly accepted framework that departs from the traditional bipolar sex-role model. This study was conducted to: (1) cross-validate the Bem Sex-Role Inventory (BSRI) and the Jackson Personality Rating Form's Masculinity and Femininity Scales; (2) relate the androgyny concept to physical education; and (3) examine the self-esteem of active, female students. Seventy-eight students who were voluntarily enrolled in physical education courses at a large university filled out two instruments, the BSRI and the PRF. Based on the results, it was concluded that the BSRI seems to be a valid instrument for general physical education students. The distribution of individuals by sex-role self-definition categories did not depart from the norms. Student self-esteem scores were at least as high as the norms and appear to be linked with masculine characteristics. (Authors/JD)

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Bem Sex-Role Inventory and Jackson's Personality Rating Factors Scores on Students in Tennis and Fencing Classes

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Running head: BSRI and PRF

Abstract

As the traditional, bipolar sex-role stereotypes are being reconsidered, psychometric instruments are being developed to assess the alternative sex-role models and to allow the new concepts to be operationalized. Androgyny is an increasingly accepted framework that departs from the traditional, bipolar sex-role model. With this in mind, this study was conducted to 1) cross-validate the Bem Sex-Role Inventory (BSRI) and the PRF ANDRO scale, 2) to relate the androgyny concept to physical education, and 3) to examine the self-esteem of active, female students. Based on the results, it was concluded that 1) the BSRI seems to be a valid instrument for general physical education students, 2) the distribution of individuals by sex-role self-definition categories did not depart from the norms, and 3) self-esteem scores for the students were at least as high as the norms and appear to be linked with instrumentality.

Bem Sex-Role Inventory and Jackson's Personality Rating Factors Scores on Students in Tennis and Fencing Classes

In the past, theoretical definitions and research methodologies have described masculinity and femininity as opposites on a continuum. To be masculine is to be totally different and by mutual exclusion, not feminine. This traditional conceptualization of masculinity and femininity as bi-polar opposites is being challenged and the stereotypes that have limited individual expression in various areas, like physical activities, are also being questioned. According to this traditional bipolar conceptualization, females are subject to constraints of expectations to be more passive, less aggressive, and more dependent (Broverman et al., 1970) than men and, therefore, might feel conflict in or avoid spheres that demand assertion, strength, and independence.

The traditional bipolar concept has been demonstrated and measured by the masculinity and femininity scales on such personality assessment instruments as the Minnesota Multi-Phasic Personality Inventory, Edwards Personal Preference Scale, California Personality Inventory, and the Adjective Check List. Psychometrically, masculinity is defined as an absence of femininity and femininity is defined by these instruments as an absence of masculinity. Alternative sex-role models are being developed that reduce stereotyping. For example, the androgyny model is gaining acceptance and has stimulated research in the area. To operationalize the androgyny concept, Bem (1974) developed the Bem Sex-Role Inventory (BSRI). Using the

BSRI, individuals may be categorized as feminine, masculine, or androgynous. Feminine persons score high on characteristics Bem describes as expressive but low on those described as instrumental, while masculine individuals score high on instrumental characteristics but low on expressive characteristics. Androgynous persons, however, score high on both instrumental and expressive characteristics. In a later revision of the work on androgyny, Bem added a fourth category, described as "undifferentiated" to account for individuals who score low on both instrumentality and expressiveness (Bem & Watson, 1976).

Since the androgyny concept accounts for behaviors that are situationally specific and also for characteristics along a continua on personality dimensions, it allows for the expression of instrumental (masculine) characteristics as well as "feminine" attributes. It therefore accounts for individuals who participate in nontraditional activities without requiring the negation of their femininity or masculinity. The androgyny model predicts that individuals will avoid situations that are not consistent with their self-perception (Bem, 1974). When the androgyny concept was applied to women in sports, Helmreich and Spence (1976) found the predicted higher proportion of androgynous women on varsity teams. Using the Bem Sex-Role Inventory (BSRI), Duquin (1976) sampled varsity athletes and physical education majors and found that the greatest percentage of women were androgynous. Women physical education teachers were also highly androgynous and instrumental (Hoferek, 1978). The predicted absence of highly "feminine" (expressive) females was found in university classes of students

voluntarily enrolled in fundamentals of movement, fencing, and tennis (Hoferek, unpublished). That is, women defined as "feminine" by traditional measures of masculinity and femininity tended to avoid instrumental, activity situations.

There seems to be a relationship between sex-role self-perception, sex, and self-esteem. For example, following the more recent conceptualization of masculinity and femininity as orthogonal, androgynous individuals have generally been found to have higher levels of self-esteem than masculine or feminine individuals (Spence et al., 1975; Wetter, 1975), although exceptions have been documented (Bem, 1977). Further, masculinity and self-esteem appear to be more related than femininity and self-esteem (Berzins et al., 1978; Wetter, 1975).

With these issues in mind, this study was conducted to determine the applicability of the androgyny concept to students in general tennis and fencing classes. The major goals were: 1) to cross-validate the BSRI and the Jackson Personality Research Form's (PRF) masculinity and femininity scales on a new sample of subjects, 2) to relate the work of Bem and others on androgyny to physical education activities, and 3) to examine the self-esteem of female students engaged in these instrumental activities.

The Bem Sex-Role Inventory (BSRI) and the PRF Andro Scale (PRF) were administered to students electively enrolled in beginning fencing, intermediate fencing, and intermediate tennis classes offered by the physical education department of a large midwestern university. Although the BSRI and PRF had been cross-validated previously on other samples (Berzins,

1978), it was judged worthwhile to test the instruments on an activity-oriented sample.

There are theoretical and statistical reasons for doing this. First, traditional attitudes about the pursuit of instrumental activities (e.g., tennis and fencing) form an important part of sex-role stereotypes, and these inventories have been designed to challenge traditional attitudes about such pursuits. Second, validation of the inventories on diverse populations increases our confidence in the instruments. Third, the self-esteem of women in sports has not followed theoretical predictions and has been higher than expected (Snyder & Spreitzer, 1975).

Procedure

During the first week of classes, the BSRI and PRF were administered to 88 students who voluntarily enrolled in physical education courses at a large midwestern university. Physical education was not required for graduation but the courses could be used for elective credits. The courses were beginning fencing, intermediate fencing, and intermediate tennis.

The students were from a wide range of academic disciplines. The majority were upperclass and graduate students. The students were requested but not required to assist the investigator by taking some time to fill out the materials. The only explanation given was that it would help in some research work. The students were told that if they wanted results, they could leave their name and address on a separate sheet of paper. No identification was requested, although sex and age were acquired. Both the PRF and the BSRI were stapled together with a letter

explaining the task and requesting the students' cooperation. The PRF was placed before the BSRI because it was thought that the nature of the items was less transparent than those on the BSRI which might provide hints to the students about the nature of the study and perhaps result in a response bias. When completed, the materials were anonymously placed in an envelope.

Eighty-eight students filled out the materials while only one person did not. Ten questionnaires could not be used because 75% or less of one of the two instruments was not completed. The remaining instruments were sufficiently complete to be used. The true or false items that were missing on the PRF were filled in using a random method. Means were substituted for missing items on the BSRI. Only four BSRI instruments had more than two of the 40 items missing, and of those, the missing items were almost evenly divided between masculinity and femininity.

Since controversy exists over the scoring method for the BSRI, both the median split and *t* ratio scoring methods were used. The median split method yields four categories: feminine, androgynous, masculine, and undifferentiated. The *t* ratio produces five categories: feminine, near feminine, androgynous, near masculine, and masculine.

Results

Correlations were made between the PRF and BSRI on both masculinity and femininity scales (See Table 1). There was a significant positive

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Insert Table 1 About Here

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correlation between the instruments for both scales. The correlation between the PRF femininity (F) scale and the BSRI femininity (F) scale was .481, which is significant at $p < .001$*. Similarly, for the masculinity (M) scales, the relation was $r = .64$, $p < .001$*. Correlations were also made between the self-esteem (SE) measures and both F and M scales. For the PRF the correlation between SE and F is $r = -.012$, the correlation between SE and M is $r = .371$, $p < .001$*. On the BSRI the correlations between SE and M and F are respectively $r = .571$, $p < .001$* and $r = -.009$. For both the PRF and the BSRI only the correlations between SE and M were significant and positive, whereas the correlations between SE and F were insignificantly negative.

When the sample was analyzed by sex the results were similar. For females, $N = 35$, the PRF and BSRI correlate positively and significantly for both the F and M scales. For the femininity scales, $r = .572$, $p < .001$* and for the M scale $r = .515$, $p < .01$*. Again only the correlations between SE and M scales were significant, $r = .551$, $p < .001$* and $r = .417$, $p < .05$*. When the sample was analyzed for males only, $N = 43$, the results were again similar, except for insignificant positive correlations on both instruments between SE and F scales.

Differences scores (dF) were formed by subtracting the M score for an individual from her/his F score, $dF = F - M$, so that a negative score indicates that the S had a higher M score than F score. These scores were analyzed by sex and a correlation made between the two instruments. For each sex there was a positive, significant ($p < .001$) correlation

between Ss's dF scores on the two tests (r = .702 for females, r = .570 for males).

To summarize, there is a significant positive correlation between scores on the BSRI and PRF for both sexes, taken either separately or together. Similarly, for the total sample and for both males and females, there is a significant positive correlation between SE and the M scale of both the BSRI and PRF. Finally, there is a significant positive correlation between instruments on the dF score for both females and males.

The distributions of the populations sampled did not differ from the norms established for the BSRI and PRF (See Table 2). The results on

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Insert Table 2 About Here

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the BSRI, when the sign test (median split) was used, for women only indicated fewer (5.7%) masculine females in the classes than the norm (16%), although the PRF scores showed close correspondence between the female sample and the norm for percentage of masculine scoring women.

On the self-esteem measure, the tennis and fencing students were similar to the norms established by Berzins et al. (1976), although the physical education women were slightly higher than females in the normative group.

Insert Table 3 About Here

Discussion of Results

The significantly high positive correlations between the two instruments that were used to measure femininity and masculinity indicate that they measure similar things. In addition, the highly significant correlation between the two instruments indicates that either one or both tests could be used to measure androgyny as well as femininity and masculinity.

That the distribution of Ss on the F, M and Androgyny scales does not differ from the norms for those scales is not consistent with other data gathered at the same institution. The results may be due in part to the small sample, to the shift from a required/elective to completly elective program, or to a more thorough integration by sex of the classes. Since the physical education program was shifting to a merged women's and men's department, the trend toward coed classes from single sex classes may have changed the definition of the situation. Further research is needed before firm conclusions can be made, however.

The correlation of the self-esteem scores and masculinity are consistent with the findings of Wetter (1975). In light of Broverman et al's (1970) finding that masculine norms correlated with our definition of mental health, these results are not surprising. The lack of a positive relationship of SE with femininity may be a reflection of the differences in the rewards given in the society to instrumental and expressive behaviors. In particular, instrumental behaviors are more often rewarded in ways that increase an individual's sense of personal power, for example rewards of money or increased competence, whereas expressive behaviors are rewarded in ways that might reinforce dependency and powerlessness.

Conclusion

Three conclusions can be made from the results. First, the BSRI seems to be a valid instrument for measuring sex-role self-perception for general physical education students. Second, the expected avoidance by highly "feminine" women and men did not occur. Third, the SE scores for students in the physical activity classes were at least as high as the norms and appears to be linked to the instrumentality traditionally associated with "masculinity."

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Table 1.

(a) Correlations between the F & M scales of the BSRI and the PRF, and

(b) Correlations SE and M & F Scales.

(a) Correlations between BSRI and PRF

Subjects	F Scales	M Scales	dF Scores (F - M)
Total N = 78	.481 p < .001*	.640 p < .001*	
F N = 35	.570 p < .001*	.515 p < .01*	.702 p < .001*
M N = 43	.418 p < .01*	.738 p < .001*	.570 p < .001*

(b) Correlations between SE and F & M scales of the BSRI and PRF

	BSRI Scales and SE		PRF Scales and SE	
Subjects	F Scale	M Scale	F Scale	M Scale
Total N = 78	-.009	.571 p < .001*	-.012	.371 p < .001*
F N = 35	-.195	.551 p < .001*	-.291	.417 p < .05*
M N = 43	.191	.580 p < .001*	.187	.332 p < .05*

Table 2. Distribution of Tennis and Fencing Students Compared to Stanford and Kentucky Norms on the BSRI and PRF

	BSRI Median Split Results			BSRI t Ratio Results			PRF Results		
		Tennis & Fencing Students	Stanford Norm		Tennis & Fencing Students	Stanford Norm		Tennis & Fencing Students	Kentucky Norms
WOMEN ONLY	F	37.1 %	34%	F	45.7%	20%	F	40 %	44.67%
	A	28.57%	29%	NF	5.7%	18%	A	17 %	22.33%
	M	5.7 %	16%	A	28.6%	41%	M	14.28%	14.94%
	U	28.57%	20%	NM	11.4%	13%	U	28.72%	18.07%
				M	8.6%	9%			
MEN ONLY	F	13.9%	16%	F	9.3%	8%	F	20.9%	8.97%
	A	18.6%	21%	NF	11.6%	11%	A	25.5%	20.13%
	M	41.8%	37%	A	18.6%	30%	M	37.2%	50.11%
	U	25.6%	27%	NM	16.3%	21%	U	16.4%	20.79%
				M	44.2%	30%			

Table 3. Self-Esteem Scores for Tennis and Fencing Students Compared to Kentucky Norms

	Tennis & Fencing Students		Kentucky Norm*	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Total Group	14.038	3.9492	13.73	4.52
Women Only	13.771	3.6306	13.16	4.94
Men Only	14.256	4.2207	14.29	3.97

*Berzins et al., 1976.